Complete Summary

GUIDELINE TITLE

Evaluation and treatment of childhood obesity.

BIBLIOGRAPHIC SOURCE(S)

University of Texas at Austin, School of Nursing, Family Nurse Practitioner Program. Evaluation and treatment of childhood obesity. Austin (TX): University of Texas at Austin, School of Nursing; 2004 May. 30 p.

GUIDELINE STATUS

This is the current release of the guideline.

COMPLETE SUMMARY CONTENT

SCOPE
METHODOLOGY - including Rating Scheme and Cost Analysis
RECOMMENDATIONS
EVIDENCE SUPPORTING THE RECOMMENDATIONS
BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS
QUALIFYING STATEMENTS
IMPLEMENTATION OF THE GUIDELINE
INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES
IDENTIFYING INFORMATION AND AVAILABILITY

SCOPE

DISEASE/CONDITION(S)

Childhood obesity

GUIDELINE CATEGORY

Counseling
Evaluation
Management
Screening
Treatment

CLINICAL SPECIALTY

Family Practice
Internal Medicine

Nursing
Pediatrics

INTENDED USERS

Advanced Practice Nurses
Dietitians
Nurses
Physician Assistants
Physicians

GUIDELINE OBJECTIVE(S)

- To assist in early identification and screening of obesity in children
- To provide health care providers with guidance requiring current standards of screening, evaluation, and treatment of obesity in the pediatric population

TARGET POPULATION

Patients aged 3 to 17

Note: This guideline is not directed to the treatment of pregnant patients.

INTERVENTIONS AND PRACTICES CONSIDERED

Screening/Diagnosis

Subjective Assessment

1. Present history
2. Symptoms
3. Past medical history
4. Medication history
5. Family history
6. Ethnicity
7. School/social environments
8. Psychosocial history
9. Substance abuse history
10. Dietary history
11. Reproductive history (menses history for females and secondary sexual characteristics for boys and girls)
12. Family support

Objective Assessment

1. Body mass index (BMI)
2. Blood pressure
3. Complete physical exam, including skin and orthopedic assessment

Diagnostic Procedures

1. BMI
2. Hypertension (HTN) measurement (blood pressure)

   Laboratory studies including measurement of hemoglobin A1C and thyroid stimulating hormone (TSH), lipid panel, complete metabolic panel, and urinalysis

3. Other tests based on positive findings in history and physical examination:
   - 12-lead electrocardiogram and/or echocardiogram
   - complete blood count (CBC)
   - urine microalbumin
   - pulmonary function test
   - chest x-ray
   - skin fold measurements
   - sleep studies
4. Categorization of weight according to BMI as optimal, at-risk of overweight, and/or overweight as defined by greater than or equal to 85th percentile, and/or greater than 95th percentile, respectively, according to growth charts for age, sex, and ethnicity (as defined by the Centers for Disease Control and Prevention [CDC])
5. Follow-up recommendations based on screening measurement
6. Unique screening considerations include polycystic ovarian syndrome (PCOS) and genetic screening for disease processes such as Prader-Willi syndrome, Blount's disease, pseudotumor cerebri, gallbladder disease, metabolic syndrome, fatty liver, slipped capital femoral epiphysis (SCFE).

Counseling/Management/Treatment

1. Assessment and counseling for exercise program (as defined by the CDC)
2. Limiting television and/or video games to two hours per day.
3. Blood cholesterol management
4. Blood pressure elevation management
5. Diabetes management (hemoglobin A1C)
6. Implementation of exercise plan
7. Cigarette smoking cessation
8. Diet teaching
9. Pharmacological treatment with referral as necessary
10. Referral to appropriate specialty as needed
11. Promotion of healthy family behavior change

MAJOR OUTCOMES CONSIDERED

- Body mass index (BMI)
- Morbidity and mortality
- Psychological/Social measures as defined by the Primary Care Evaluation of Mental Disorders Questionnaire

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Online searches of PubMed, Medline, CINAHL, NIH, CDC, American Academy of Pediatrics, American Heart Association, American Bariatric Society, and Healthy People 2010 databases were performed using the major keywords of childhood obesity screening, childhood overweight guidelines, pediatric obesity, pediatric and/or childhood body mass index (BMI), overweight treatment for childhood and/or pediatric obesity, childhood obesity demonstration grants and/or controlled trials published in the last 5 years.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Subjective Review
Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Levels of Evidence

Grade A: Randomized clinical trials
Grade B: Well-designed clinical trials
Grade C: Panel consensus

METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus
Informal Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Strength of Recommendations

Level I: Usually indicated, always acceptable, and considered useful and effective.

Level IIa: Acceptable, of uncertain efficacy, and may be controversial. Weight of evidence in favor of usefulness/efficacy.

Level IIb: Acceptable, of uncertain efficacy, and may be controversial. May be helpful, not likely to be harmful.

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Comparison with Guidelines from Other Groups
Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

A draft of the guideline was developed by a group of Family Nurse Practitioner (FNP) students and submitted for review to the FNP program faculty for review. Revisions were made after recommendations were received.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Definitions of the strength of the recommendations (I, IIa, and IIb) and classification of the evidence (Grades A, B, and C) are provided at the end of the "Major Recommendations" field.

Major Recommendations

- Screening children for overweight by using body mass index (BMI) is the standard obesity measurement and should be obtained at each health care encounter for children older than 2 years of age using the National Center for Health Statistics age and gender-specific percentile curves up to 20 years of age (See appendix I of the original guideline document titled "Flow Chart - Children and Adolescents"). (Level I)
- BMI reading greater than or equal to the 95th percentile for age and gender is overweight. A BMI between the 85th and 95th percentile for age and gender is considered at-risk for overweight and should be evaluated for hypertension (HTN), dyslipidemia, and diabetes. (Level I)
- A BMI greater than or equal to 95th percentile for age and sex should be further evaluated for exogenous causes of obesity and for complications caused by overweight status. (Level I)

- Early intervention begins with children greater than or equal to two. (Level I)
- The family must be ready for change, as a lack of readiness could lead to failure. Probe for readiness to change. (Level IIa)
- Providers should educate the family on medical complications related to overweight including HTN, dyslipidemia, heart disease, and diabetes. (Level I)
- Providers should educate the family on psychosocial complications related to obesity such as depression, confidence issues, and poor self-esteem. (Level I)
- The entire family and/or all caregivers should be involved in the development and implementation of the program. (Level I)
- The family should be in agreement with the interventions. (Level I)
- Treatment programs should emphasize long-term permanent changes, not rapid weight loss or short-term diets and exercise programs. Persuade the family to seek small, gradual, but lifelong changes. (Level I)
- Support family activities that provide everyone with exercise (promote inclusiveness). (Level I)
- Low fat, low cholesterol, reduced sugar diet per age weight and nutritional requirements (www.health.gov/dietaryguidelines) (Level I)
- Encourage planned meals, especially eating breakfast. Discourage skipping meals. (Level I)
- Discourage eating while watching television. (Level I)
- Avoid the use of food as a reward or punishment. (Level I)
- Stock refrigerator with healthy food and drink choices. (Level I)
- Encourage 30 to 60 minutes of moderate physical activity most days of the week. (Level I)
- Promote a variety exercise to prevent boredom or overtraining. (Level I)
- Clinicians should maintain an open and accepting relationship to all family members involved. (Level I)
- If necessary, utilize a multi-disciplinary approach for comprehensive management. (Level I)
- Consider cultural norms and socioeconomic status. (Level I)

Medical Evaluation

Purpose

- Rule out secondary causes of childhood obesity: genetic causes include Prader-Willi, Bardet-Biedl, and Cohen diseases; endocrinologic causes are hypothyroid and Cushing syndrome.
- Assess psychological causes of obesity in patients and family members. These include low self-esteem, eating disorders, and depression.
- Assess for complications associated with obesity such as sleep apnea, metabolic syndrome, fatty liver, cholelithiasis, type II diabetes, polycystic ovary syndrome (PCOS), Blount's disease, and slipped capital femoral epiphysis (SCFE).

Management/Treatment

If a child is identified at-risk for overweight or overweight, the provider will:

- Complete the Weight Management Plan for Children and Adolescents (See Appendix 2 of the original guideline document titled "Overweight and obesity in children and adolescents: a guide for general practitioners.").
- Assess risk factors related to food and activity levels.
- Identify and rule out a mental health disorder that may be related to exacerbating child's eating habits and activity (Psychological tool – Primary Care Evaluation of Mental Disorders Questionnaire: Brief Patient Health Questionnaire). (See appendix 3 of the original guideline document).
- Introduce patient and family to Centers for Disease Control and Prevention (CDC) Body and Mind "Motion Commotion" Physical Activity Assessment Tool.
- Using the CDC Body and Mind Fit 4 Life Guideline will counsel family and patients of risks associated with overweight status.
- Counsel patient and family on dietary choices and relationship to overweight status.
- Evaluate cultural aspects of the family´s beliefs on diet, exercise, and concept of obesity.
- Counsel patient on exercise versus sedentary (computers, games, television) habits and the relationship to childhood overweight status.
- Teach patient and family how to support and maintain the challenges of initiating a diet and exercise plan.
- Encourage total family involvement in healthy living and eating.
- Establish activity calendar.
- Refer to registered dietician and physical exercise trainer (if needed).
- Refer for sleep study, cardiology, neurologist, orthopedist, geneticist, gynecologist, endocrinologist, urologist, and pulmonologist, if concomitant disease processes are present or are suspected in relationship to child´s overweight status.
- Refer to specialty weight reduction clinics including consideration of medication and/or bariatric surgery (needed in less than 1% of children and adolescents identified as obese).
- Schedule patient for regular return visits for follow-up.

Monitoring of Treatment

- CDC Fit 4 Life Program - Introduce nutritional meals and treats, review activity calendar, and discuss the importance of having a variety of activities and foods.
- Monitor improvement and/or plateau or regression as per the Weight Management Program.
- Adjust intensity of therapy and/or modality dependent on patient's enthusiasm or resistance (treatment will be individualized for each patient in order to provide the best opportunity for success).

Continuation of Follow-up Visits

- Take vital signs including blood pressure; calculate BMI and compare to prior visits.
- Evaluate patient's (family) compliance with diet.
- Evaluate patient's (family) compliance with exercise.
- Evaluate patient's (family) sedentary time activities.

- Evaluate side effects of current regimen if any; avoid consequences of intense scrutiny of one's body size – body dysmorphia, anorexia, bulimia, and/or depression.
- Support improvements other than scale weight loss:
    - Body fat per caliper measurement
    - Engagement in physical activity
    - Improved self-esteem and confidence
    - Improved family functioning
    - Engagement in self-regulating behaviors
- Identify triggers and roadblocks that might hinder short- and long-term success.
- Repeat follow-up steps above as appropriate.

Intervention

Visit 1

Subjective Assessment

- History
- Symptoms
- Past medical history
- Medication history
- Family history
- Psychosocial history
- Substance abuse history
- Dietary history
- Reproductive history (menses history for females and secondary sexual characteristics for boys and girls). Document according to Tanner Stages

Objective Assessment

- Physical exam
    - Blood pressure (mmHg)
    - Height (meters)
    - Height percentile
    - Weight
    - Weight percentile
    - BMI (weight in kg/height in meters squared)
    - BMI percentile by age and gender
    - Assess for facial dysmorphia (genetic syndrome)
    - Funduscopic exam (papilledema)
    - Tonsils (hypertrophy)
    - Thyroid (goiter)
    - Assess for acanthosis nigricans (glucose intolerance)
    - Assess for hirsutism (PCOS)
    - Assess for violaceous striae (Cushing's disease)
    - Assess for upper abdominal tenderness (gallbladder disease)
    - Assess for undescended testicle (Prader Willi Syndrome)
    - Assess for small hands and feet (Prader Willi Syndrome)
    - Assess for limited hip range of motion (SCFE)
    - Assess for lower-leg bowing (Blount´s disease)

Source: Eissa M, Gunner K. Evaluation and management of obesity in children and adolescents. Journal of Pediatric Health Care 2004 Jan; 18(1): 35-38.

Assessment/Plan

- Perform diagnostic procedures including measurements of blood pressure, hemoglobin A1C, BMI, thyroid-stimulating hormone (TSH), lipid panel, and complete metabolic panel.
- Perform additional testing as warranted (e.g. 12-lead electrocardiogram and/or echocardiogram, urinalysis, complete blood count [CBC], urine microalbumin, pulmonary function test, chest x-ray, skin fold measurements, and sleep studies).
- Categorization of weight according to BMI as optimal, at-risk for overweight, and/or overweight as defined by greater than or equal to 85th percentile and 95th percentile, respectively, according to growth charts for age, sex, and ethnicity.
- Provide follow-up recommendations based on screening measurement.
- Perform other tests based on positive findings in history and physical examination (e.g., PCOS, genetic screening for disease processes such as Prader-Willi Syndrome, Blount's disease, pseudotumor cerebri, gallbladder disease, metabolic syndrome, fatty liver, SCFE).

Visit II

- Provider will initiate "Weight Management Plan: A Guide for General Practitioners" http://www.obesityguidelines.gov.au/pdf/children_gp.pdf.
- Provider will introduce patient and family to CDC "Fit 4 Life" recommendations at http://www.bam.gov/fit4life/fitt.htm (for ages 9 to 13).
- Conduct assessment and determine patient and/or family readiness to engage in therapeutic lifestyle change. Primary care physician (PCP) will assess and determine motivation and stages to change (precontemplation, contemplation, preparation, action, maintenance and relapse-prevention).
- Administer Brief Quality of Life Tool to patient and parent(s) to establish baseline of self-esteem (Example: PedsQL Pediatric Quality of Life Inventory, version 4.0 for ages 8 to 12).
- Advanced practice nurse/primary care physician will monitor vital signs including blood pressure and BMI and review abnormal labs.
- If referrals were made at initial visit, determine if family complied with those initial recommendations.

Visit III

- Briefly review the Weight Management Plan, specifically psychosocial distress, labs as necessary, and risk factors.
- Monitor level of intervention based on patient and family response to weight management plan.
- Advanced practice nurse/primary care physician will monitor vital signs including blood pressure, BMI, and labs.
- Discuss compliance to diet, physical activity, and stages of change and results of self-esteem tool.
- Implement motivation tactics and strategies based on child and family´s values and reward system.

- Refer as necessary.

Visit IV

- Advanced practice nurse/primary care physician will monitor vital signs including blood pressure, BMI, and labs.
- Discuss obstacles, triggers, and roadblocks to success.
- Assess stages of change.
- Assess family's adherence to the Fit 4 Life Module, giving praise for even the smallest effort to a therapeutic lifestyle change.
- Review Weight Management Plan including level of psychosocial distress.
- Administer Patient Quality of Life Tool to patient and parent(s) to compare with baseline.

Subsequent visits

- Repeat above efforts, modify plans according to outcomes.
- Continue to monitor changes in comparison to baseline (BMI, blood pressure, quality of life, psychosocial distress, labs).

Definitions

Strength of Recommendations

Level I: Usually indicated, always acceptable, and considered useful and effective.

Level IIa: Acceptable, of uncertain efficacy, and may be controversial. Weight of evidence in favor of usefulness/efficacy.

Level IIb: Acceptable, of uncertain efficacy, and may be controversial. May be helpful, not likely to be harmful.

Levels of Evidence

Grade A: Randomized clinical trials
Grade B: Well-designed clinical trials
Grade C: Panel consensus

CLINICAL ALGORITHM(S)

An algorithm is provided in the original guideline document for screening and follow-up management of childhood obesity.

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of evidence supporting each recommendation is not specifically stated. The guideline draws heavily from the Expert Committee Recommendations for

Obesity Evaluation and Treatment and the American Heart Association Guidelines for Primary Prevention of Atherosclerotic Cardiovascular Disease Beginning in Childhood.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- Prompt and appropriate interventions for at-risk or overweight children
- Prevention and/or treatment of hypertension (HTN), adult obesity, dyslipidemia, musculoskeletal problems, diabetes and psychosocial problems
- Improved body image and confidence
- Improved physical health

POTENTIAL HARMS

- Over/under monitoring before initiating treatment
- Body dysmorphia
- Affective reaction
- Disruption or challenging family dynamics
- Cultural dissonance regarding body image
- The inherent inconsistencies of office measurement may lead to non-adherence to treatment program and potential long-term negative psychological effects.

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

This guideline is not intended to direct the treatment of patients younger than 2 years of age, or children or adolescents who become pregnant. Patients experiencing severe complications related to obesity or those showing continued weight gain despite intervention should be referred to a specialized obesity management program.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

IMPLEMENTATION TOOLS

Clinical Algorithm

For information about availability, see the "Availability of Companion Documents" and "Patient Resources" fields below.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Staying Healthy

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

University of Texas at Austin, School of Nursing, Family Nurse Practitioner Program. Evaluation and treatment of childhood obesity. Austin (TX): University of Texas at Austin, School of Nursing; 2004 May. 30 p.

ADAPTATION

The guideline draws heavily from the Expert Committee Recommendations for Obesity Evaluation and Treatment and the American Heart Association Guidelines for Primary Prevention of Atherosclerotic Cardiovascular Disease Beginning in Childhood.

DATE RELEASED

2004 May

GUIDELINE DEVELOPER(S)

University of Texas at Austin School of Nursing, Family Nurse Practitioner Program - Academic Institution

SOURCE(S) OF FUNDING

University of Texas at Austin, School of Nursing, Family Nurse Practitioner Program

GUIDELINE COMMITTEE

Practice Guidelines Committee

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

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FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

GUIDELINE AVAILABILITY

Electronic copies: None available

Print copies: Available from the University of Texas at Austin, School of Nursing. 1700 Red River, Austin, Texas, 78701-1499

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI on August 26, 2004. The information was verified by the guideline developer on November 12, 2004.

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